

ABSTRACT OF THE DISCLOSURE

The method according to the present invention includes the steps of inputting an optical signal having a first wavelength and probe light having a second wavelength different from the first wavelength into a nonlinear optical medium, broadening the spectrum of the probe light through cross phase modulation between the optical signal and the probe light inside the nonlinear optical medium, and extracting a signal component including a modulated component of the optical signal and having a band narrower than the band of the spectrum broadened. According to the present invention it can be possible to provide a method and device which can easily convert the wavelength of signal light into an arbitrary wavelength in performing optical 3R functions.